front, back and sides of the object as well. By moving display device **72** "around" the object, the user may view rotated views of the object.

In this embodiment, display device **72** may house a processor that performs the function of position processor and display processor. The processor maps visual data, which may be stored in memory in display device **72**, to display **74** as a function of the position of display device **72** relative to position reference **78**.

As illustrated in FIG. **6**, the invention may create a "virtual object," i.e., the invention may create an appearance of a three-dimensional object, even though no physical three-dimensional object is present. The invention may further support a "virtual X-ray," which creates the appearance of being able to see through a solid physical object. By moving a display device along or around a physical object, a user can see a virtual representation of what lies beneath the surface of the physical object. A virtual X-ray may allow a user to recall the location of wiring or pipes behind a wall, for example, by moving a display device proximate to the wall. The visual data—the location of the wiring and the pipes in this example—may have been recorded when the wall was built.

The invention may offer one or more advantages. The invention supports a range of flexibility for displaying visual data. The invention can be adapted to any number of display devices, and many different kinds of display devices.

The invention is portable. In some circumstances, it is more advantageous to transport several small display devices rather than one large display device. In addition, there may be circumstances in a group of individuals, each having a display device, can use their display devices cooperatively to achieve benefits not available to each display device individually.

Several embodiments of the invention have been described. Various modifications may be made without departing from the scope of the invention. For example, the invention may support multiple position processors or display processors. The invention may further support any position sensors that sense position tactilely, electronically, optically, electromechanically, or by any other technique or combination of techniques.

Although described in terms of display devices that are handheld, the invention is not limited to display devices of any size. Nor is the invention limited to planar display devices. Furthermore, the invention accommodates implementations in which a set of display devices includes display devices differing kinds or sizes. Nor is the invention exclusively limited to display of visual data. One or more display devices may generate audio output, for example, in addition to presenting visual data.

Furthermore, the invention is not limited to embodiments in which determining the position of a display device is performed automatically. The invention includes some embodiments in which the position of the display device is supplied to the display processor manually.

In addition, the invention includes some embodiments comprising any of a variety computer-readable media comprising instructions for causing a programmable processor to carry out the techniques described herein. Such computer-readable media include, but are not limited to, magnetic and optical storage media, and read-only memory such as erasable programmable read-only memory or flash memory. These and other embodiments are within the scope of the following claims.

The invention claimed is:

1. A system comprising:

a first display device;

a second display device; and

a processor that determines positions of the first and second display devices relative to a position reference and maps respective portions of visual data to the first and second display devices as a function of the determined positions of the first and second display devices, wherein movement of one of the display devices relative to the other display device causes at least one of the display devices to display a different portion of the visual data, wherein the first and second display devices wirelessly communicate with one another, and wherein the first display device is a master device that includes the processor and the second display device is a slave device that receives its respective portion of the visual data from the first display device as a function of the determined position of the second display device relative to the position reference.

2. The system of claim **1**, wherein movement of the second display device relative to the first display device causes a change in the respective portion of the visual data displayed by the second display device.

3. The system of claim **1**, wherein the visual data comprises a geographical map and wherein first and second display devices display respective portions of the geographical map.

4. The system of claim **1**, wherein the visual data comprises three-dimensional data, and wherein the movement of one of the display devices relative to the other display device comprises three-dimensional movement that causes at least one of the display devices to display a different portion of the three-dimensional data.

5. The system of claim **1**, further comprising additional display devices that display different portions of the visual data as a function of positions of the additional display devices relative to the position reference.

6. The system of claim **1**, wherein the position reference comprises at least one of an electronic sensor, an optical sensor, an electromechanical sensor, an acoustic sensor and a tactile sensor.

7. A method comprising

determining positions of first and second display devices relative to a position reference; and

mapping respective portions of visual data to the first and second display devices as a function of the determined positions of the first and second display devices, wherein movement of one of the display devices relative to the other display device causes at least one of the display devices to display a different portion of the visual data, wherein the first and second display devices wirelessly communicate with one another, and wherein the first display device is a master device having a processor that determines the position of the first and second display devices relative to the position reference, and the second display device is a slave device that receives its respective portion of the visual data from the first display device as a function of the determined position of the second display device relative to the position reference.

8. The method of claim **7**, wherein movement of the second display device relative to the first display device causes a change in the respective portion of the visual data displayed by the second display device.

9. The method of claim **7**, wherein the visual data comprises a geographical map and wherein first and second display devices display respective portions of the geographical map.

10. The method of claim **7**, wherein the visual data comprises three-dimensional data, and wherein the movement of one of the display devices relative to the other display device comprises three-dimensional movement that causes at least one of the display devices to display a different portion of the three-dimensional data.